

WHAT IS CLAIMED IS:

1. A method for making an impregnated textile synthetic leather, the method comprising:

- 5                 (a) impregnating a non-woven or woven textile with a polyurethane dispersion comprised of a nonionizable polyurethane and an external stabilizing surfactant; and
- 10                 (b) exposing the impregnated textile to water containing a coagulant for a coagulation time sufficient to coagulate the dispersion.

2. The method of Claim 1, wherein the method is carried out in an environment containing less than about 2000 parts per million by weight of an organic solvent.

15                 3. The method of Claim 1, wherein the method is carried out essentially free of an organic solvent.

4. The method of Claim 1, wherein the coagulant is a multivalent cation neutral salt.

5. The method of Claim 4, wherein the coagulant is an alkaline earth cation salt.

20                 6. The method of Claim 5, wherein the coagulant is calcium nitrate, magnesium nitrate, strontium nitrate and barium nitrate or mixture thereof.

25                 7. The method of Claim 3, wherein the polyurethane dispersion contains non-polyurethane polymeric particles.

8. The method of Claim 1, wherein the coagulant time is at most 2 minutes.

9. The method of Claim 8, wherein the coagulant time is at most 1 minute.

10. The method of Claim 9, wherein the coagulant time is at most 30 seconds.

11. The method of Claim 1, further comprising leaching the impregnated textile after step (b) by exposing  
5 the impregnated textile to water.

12. The method of Claim 1, wherein the polyurethane dispersion contains a thickener.

13. The method of Claim 12 wherein the thickener is water soluble thickener that is not ionizable.

10 14. The method of Claim 13 wherein the thickener is a methylcellulose ether.

15 15. The method of Claim 1 further comprising applying a frothed polymeric dispersion after step (b) to form a synthetic leather having a poromeric layer thereon.

16 16. The method of Claim 15 wherein the frothed polymeric dispersion is an aqueous externally stabilized polyurethane dispersion.

17. The method of Claim 16 wherein the poromeric layer is heated sufficiently to dry and cure the poromeric  
20 layer and then is leached in water.

18. A method for making synthetic leather having a poromeric layer thereon, the method comprising:

(a) applying onto a textile, impregnated with a polymer, a frothed aqueous polyurethane dispersion, the  
25 aqueous polyurethane dispersion having an externally stabilizing surfactant; and then

(b) heating to a temperature sufficient to dry and cure the product of step (a) to form the synthetic leather having a poromeric layer.

19. The method of Claim 18, wherein the frothed aqueous polyurethane is of an aromatic polyisocyanate.

20. The method of Claim 19, wherein the aromatic polyisocyanate is 2,2'-diphenyl-methanediisocyanate,  
5 4,4'diphenyl-methanediisocyanate, 2,4'diphenyl-methanediisocyanate or mixture thereof.

21. The method of Claim 18, wherein the frothed polyurethane dispersion is frothed mechanically.

22. The method of Claim 18 wherein the synthetic leather of step (b) is leached using water essentially free of organic solvents for a time sufficient to remove at least about 10% by weight of the externally stabilizing surfactant.  
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23. The method of Claim 22, wherein the synthetic leather of step (b) is leached for a time sufficient to  
15 remove at least 50% of the externally stabilizing surfactant.

24. The method of Claim 23 wherein the synthetic leather of step (b) is leached for time sufficient to remove at least 70% of the externally stabilizing surfactant.

25. The method of Claim 18 wherein the externally  
20 stabilized surfactant is a mixture of an anionic and an amphoteric surfactant.

26. The method of Claim 25, wherein the amphoteric surfactant is a betaine.

27. The method of Claim 18 wherein the method is  
25 performed essentially free of organic solvents.

28. A synthetic leather comprised of a textile having a plurality of fibers wherein the textile has therein a polyurethane and a multivalent cation substantially water insoluble salt of an organic acid.

29. The synthetic leather of Claim 28 wherein the organic acid is butyric acid; hexanoic acid; octanoic acid; decanoic acid; dodecanoic acid; lauric acid; myristic acid; palmitic acid; oleic acid; linoleic acid; stearic acid;  
5 linolenic acid; dodecylbenzene sulfonic acid; or mixture thereof.

30. The synthetic leather of Claim 28 wherein the multivalent cation of the water insoluble salt is an alkaline earth.

10 31. The synthetic leather of Claim 30 wherein the multivalent cation is calcium.

32. The synthetic leather of Claim 28, wherein the textile has a permeable polymeric poromeric layer thereon.

15 33. The synthetic leather of Claim 32, wherein the poromeric layer is polyurethane.

34. The synthetic leather of Claim 33 wherein the polyurethane of the poromeric layer is of an aqueous externally stabilized polyurethane essentially free of any organic solvent.

20 35. The synthetic leather of Claim 32, wherein the porous cellular coating has uniformly spherical pores having an average size between about 300 micrometers squared to 25000 micrometers squared by number.

25 36. A synthetic leather comprised of a textile having a poromeric layer comprised of polyurethane thereon wherein the synthetic leather has an amount of a surfactant of at least a trace amount to at most about 4% by weight of the poromeric layer and a wet ply adhesion of at least about 1.5 kg/cm.

30 37. The synthetic layer of Claim 36, wherein the amount of surfactant is at most about 2% by weight of the poromeric layer.

38. The synthetic leather of Claim 36, wherein the poromeric layer has uniformly spherical pores having an average size between about 300 micrometers squared to 25000 micrometers squared by number.

5           39. The synthetic leather of Claim 36, wherein the synthetic leather has a wet ply adhesion of at least about 2.0 kg/cm.

10          40. The synthetic leather of Claim 38 wherein the poromeric layer polyurethane is of an externally stabilized polyurethane dispersion.

41. The synthetic leather of Claim 36 wherein the synthetic leather was prepared in an environment essentially free of an organic solvent.

15          42. The synthetic leather of Claim 36 wherein the textile was impregnated with a polymer.

43. The synthetic leather of Claim 42 wherein the polymer was polyurethane.